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INTERNATIONAL ATOMIC ENERGY AGENCY AND NUCLEAR SAFETY

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY, NUCLEAR PROLIFERATION, AND
GOVERNMENT PROCESSES

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS UNITED STATES SENATE

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INTERNATIONAL ATOMIC ENERGY AGENCY AND NUCLEAR SAFETY

TUESDAY, JULY 22, 1986

U.S. SENATE, SUBCOMMITTEE ON ENERGY, NUCLEAR PROLIFERATION, AND GOVERNMENT PROCESSES, COMMITTEE ON GOVERNMENTAL AFFAIRS,

Washington, DC.

The subcommittee met at 10:10 a.m., in room SD-342, Dirksen Senate Office Building, Hon. Thad Cochran (chairman of the subcommittee) presiding.

Present: Senators Cochran and Glenn.

OPENING STATEMENT OF SENATOR COCHRAN

Senator COCHRAN. The subcommittee will please come to order.

The reactor accident in the Soviet Union has clearly underscored the international character of nuclear power and the worldwide concern that nuclear facilities be as safe as possible. The activities following the accident also clearly show the important role of the International Atomic Energy Agency (IAEA) in assisting nations with safety problems. The IAEA served as a major channel for communicating information regarding the accident, and its work should provide a basis for considering what more needs to be done to further improve nuclear safety worldwide.

It has been heartening to note the extensive international discussion of possible additional measures, both to prevent accidents and to reduce the consequences of accidents when they occur. Both the United States and the Soviet Union have now urged an international regime based on a strengthen IAEA to promote nuclear reactor safety and to provide prompt warning and supply of information in the event of a nuclear accident. These proposals deserve the vigorous encouragement of all of us.

Chernobyl can lead to a stronger and broader international code of nuclear safety. But strong commitment and increased resources must be brought to the task. Although nuclear safety is a complex subject, the people of all nations have the right to expect that producers of nucler power and builders of nuclear equipment will move quickly toward more explicit and binding safety standards.

These standards should be developed and enforced, in my opinion, within the framework of the IAEA. Although the Agency has heretofore been principally concerned with the detection of diversion of nuclear material for unauthorized purposes, its experience with international inspections and enforcement is a promising precedent on which to build. While the Agency's present voluntary

safety guidelines may be less that the world now needs, they nevertheless provide a base on which to build a stronger structure.

Although the costs will have been high, perhaps this tragic accident will result in a coordinated effort to improve internationai nuclear cooperation and nuclear safety.

Appearing before the subcommittee today is Mr. Richard T. Kennedy, Ambassador at Large and Special Advisor to the Secretary of State on Nonproliferation Policy and Nuclear Energy Affairs. Ambassador Kennedy serves as as the representative of the United States to the IAEA. Today, he will review current IAEA safety activities and discuss the prospects for improved international cooperation in nuclear safety through the Agency.

Before recognizing Ambassador Kennedy for his presentation to the subcommittee, let me recognize now the distinguished Senator from Ohio, Senator Glenn, for any comments he might have as we open the hearing. Senator Glenn.

OPENING STATEMENT OF SENATOR GLENN

Senator GLENN. Thank you, Mr. Chairman. My remarks will be brief. I have no prepared remarks, but let me say that I think that if we did not have something like IAEA, we would have to go out and invent it. It may have problems, and it may not have adequate support, and it may not have a lot of things we would like to see it have, including a lot more authority to do some things, but it is the thin red line that lets the rest of the world know what is going on in this most vital area.

The difficulties at Chernobyl, preceded by what could have been a near disaster at Three Mile Island, indicate that this is something that is not just for one nation to consider alone. It is something we have to consider internationally, because if there are disasters of any kind, the debris and the radioactivity may flow all over the world.

So I have been a big supporter of IAEA for a long time. I want to strengthen it. I look forward to these comments this morning. In fact, I think when I first came to the Senate, I believe the record would show that the first time I ever went on the Senate floor to ask for additional money for any project, it was to get $1 million extra money for IAEA to prevent them from having to fire a bunch of their inspectors, which, in grand total at that time, I think, were 40-some, I believe it was, to cover the whole world. They were going to have to let some of them go.

I got the $1 million additional money to give to IAEA so that we could keep some of this inspection going at that time. I would like to do more with IAEA, make it a stronger organization if we possibly can. With those remarks, we look forward to your testimony.

Senator COCHRAN. Thank you very much, Senator.

We now welcome to the committee Ambassador Kennedy.

We thank you so much for your cooperation with our subcommittee and for providing us with a copy of your testimony. We will include in the record the entire text of your statement for which we thank you, and then you may make whatever presentation orally to the subcommittee you choose. Thank you for being here.

TESTIMONY OF HON. RICHARD T. KENNEDY,[1] AMBASSADOR AT LARGE

Ambassador KENNEDY. Thank you very much, Mr. Chairman, and let me express my appreciation to you and the subcommittee for allowing me to come forward to discuss the programs and activities and our view of the future prospects for international cooperation in nuclear safety that are being implemented through the IAEA.

At the beginning, let me say, Mr. Chairman, that as the U.S. representative to the Agency and a member of its Board of Governors, I personally appreciate the support of the vital organization that we have there and the continuing interest of the subcommittee in that organization. I know that represents the view of the President and all of the executive branch of Government.

The important work and contributions of this organization in promoting the peaceful applications of nuclear energy while at the same time reducing the risk that nuclear material could be misused for nonpeaceful purposes are, of course, widely appreciated.

For almost 30 years, this organization has served major U.S. national security interests and, indeed, the nonproliferation interests, not only of the United States, but of the world. It has strengthened the cause of peace. The tragic accident at Chernobly, as you have indicated, Mr. Chairman, now has given the IAEA a much more visible international profile. The importance of the Agency as a central forum for international nuclear cooperation is clearly demonstrated by the fact that the IAEA's Director General, Hans Blix, was the first foreign observer invited by the Soviet Government to visit the Chernobyl site after the accident.

During Dr. Blix's visit, the Soviet Government agreed to provide information on the accident through the IAEA in order that this could be passed to other governments. Thus, the Agency has, in fact, served as a major channel for distributing information to the international community since the accident occurred.

The statement issued on May 5, 1986, by the heads of state or government of the seven major industrial nations meeting at that time in Tokyo took special note of the efforts of the Agency in this connection.

That statement read, in part, and I quote, "We welcome and encourage the work of the IAEA in seeking to improve international cooperation on the safety of nuclear installations, the handling of nuclear accidents and their consequences, and the provision of mutual emergency assistance. Moving forward from the relevant IAEA guidelines, we urge the early adoption of an international convention committing the parties to report and exchange information in the event of nuclear emergencies or accidents. This should be done with the least possible delay."

Immediately after the accident, there was understandably much concern regarding the ability of the international community to respond effectively to a major nuclear accident. Many thought, and I would add mistakenly, that little work had been done internationally in the field of nuclear safety. It became quickly evident, how-

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[1] See p. 21 for Ambassador Kennedy's prepared statement.

ever, that the IAEA had done a great deal of work in nuclear safety over the past three decades.

For example, the Agency has developed a series of internationally recognized nuclear safety standards published in approximately 5 codes and 55 safety guides.

I would add here, Senator, that indeed, those codes and guides were prepared with no small imput on the part of the Nuclear Regulatory Commission, of which I was a member at that time. We worked very hard with the Agency to assure that all of our own information had been fed into those systems, and they are now embodied in those codes and guides.

Moreover, the Agency provides its members with advisory commissions, conferences, seminars and training courses on safety, and it promotes exchanges of safety-related information. This work by the Agency has been effective and is highly respected throughout the international community.

Thus, the key question in considering possible expanded international cooperation in nuclear safety is how best to build on the work that has already been done. Any such expansion must be carefully designed to avoid unnecessary duplication or overlap with other international organizations such as the Nuclear Energy Agency of the OECD or WHO, the World Health Organization, and it must meet the genuine programmatic needs of the IAEA members.

The Board of Governors convened a special meeting in Vienna on May 21, just after the accident occurred. The purpose of the meeting was to review the available accident information. In addition, the Board began consideration of possible expanded activities by the IAEA in nuclear safety.

In a meeting which was conducted in an atmosphere of commitment and mutual cooperation, the Board assessed the possibilities, which included: A post-accident assessment; the drafting of two international conventions; a meeting of an expert working group to improve international cooperation in nuclear safety; and a meeting of senior government representatives to discuss a range of nuclear safety issues involving international cooperation. The Secretariat was directed by the Board to prepare proposals and plans on these and other safety program enhancement efforts for the Board's consideration at its regulator June meeting.

The Board continued its review of prospects for enhanced cooperation in nuclear safety at that June meeting. During this session, the Board gave its approval to several near-term activities to be pursued during the remainder of 1986 and began consideration of proposals for expanded work in 1987. Near-term activities, which were agreed, include the drafting of two international conventions on an urgent basis.

In direct response to the Tokyo economic summit statement, which I have just read part of, one convention deals with providing early notification and information about nuclear accidents which would have potential transboundary effects.

The second convention deals with assistance in the event of an accident which could involve transboundary radiological activities. Both conventions would be based on existing IAEA guidelines which were published as, and I quote, "Guidelines on Reportable

Events, Integrated Planning and Information Exchange in a Transboundary Release of Radioactive Materials." This was published as INFCIRC/321 of the Agency; and second, "Guidelines for Mutual Emergency Assistance Arrangements in Connection with a Nuclear Accident or Radiological Emergency," which has been published by the Agency as INFCIRC/310.

We hope these conventions will be ready for adoption by the IAEA General Conference in a special meeting of that conference to be held this coming September. A representative group of government experts began by meeting on July 21 for the 3 to 4 weeks to draft these conventions.

The United States, of course, is participating in these sessions vigorously. For several years, the United States had a major interest in this question, and much earlier, we proposed conventions covering both these topics, but there was little interest at that time. They were published, as I mentioned earlier, as IAEA guidelines. We believe now, within the wake of Chernobyl, the prospects for success by bringing these into convention form, and thus, a binding statement, the prospects for success are significantly greater than was the case on any other occasion.

A second activity that was approved by the June Board is a Chernobyl post-accident review which will be held between August 25 and 29 in Vienna under the auspices of the IAEA. It is expected that the Soviet Union will present a comprehensive technical review and analysis of the accident and its effects. The Soviet Union has been urged to make available as much detailed information concerning the accident and is effect as possible. Our delegation to this meeting will include highly qualified technical experts from the Nuclear Regulatory Commission, the Department of Energy and the Environmental Protection Agency.

In addition to work on the proposed conventions and the post-accident review, the Board agreed to convene a special meeting of the General Conference of the Agency; that is the convocation of the entire membership of 112 nations. This session is scheduled for September 24 through the 26, and it is expected to address a full range of issues involving international cooperation in nuclear safety. We hope that the meeting also will result in the adoption of the two conventions which I mentioned.

The United States is encouraging a high level of attendance at this meeting, and I can assure you that we will be represented at the Cabinet level. The regular meeting of the General Conference, the annual regular meeting, will follow immediately after the special meeting and will afford further opportunity to focus the membership's attention on safety cooperation.

Finally, we anticipate that there will be a meeting or meetings of technical experts in nuclear safety sometime later on, probably in November. The group will consider the results of earlier meetings and any additional measures that might be taken to improve international cooperation in enhancing nuclear safety.

In that connection, the Director General has made a number of proposals to the Board for strengthening the IAEA's nuclear safety activities beyond 1986. These proposals are in the areas of nuclear power operations; radioactive waste management; health effects; radiological protection and the safety of nuclear installations.

Continued efforts to study the health and environmental consequences of nuclear accidents are of particular importance. These and other activities in the nuclear safety areas must, or course, be closely coordinated, as I mentioned earlier, with other relevant international institutions. These include the Nuclear Energy Agency of OECD, the NEA; the World Health Organization, WHO; and the United Nations Scientific Committee on the Effects of Atomic Radiation, UNSCEAR. This cooperation and coordination is essential if we are to avoid unnecessary duplication and the inefficient use of resources.

You expressed, Mr. Chairman, a special interest in the IAEA's Operational Safety Review Team and its possible expansion. This program was initiated in 1983 to assess both developing and advanced countries. Its basic purpose is to provide, at the request of an individual member state, a comprehensive review of and recommendations for the safe operation of a nuclear facility.

In developing and advanced countries alike, the purpose is to provide an effective operational safety review. In advanced countries, the review also could provide a training opportunity for participants in the review to come from developing countries.

A typical OSART team consists of five Agency staff members and five outside experts familiar with the specific type of reactor. The team usually spend 3 weeks at a particular site. The cost to the Agency is around $50,000, which does not include salary costs. The host country pays for local costs, hotels, local transportation, and the like.

The last such review, of which there have been eight in total, was in Finland in March 1986. The next visit is scheduled for Sweden in October of this year. The only other advanced country in which a review has been conducted thus far is France.

The Agency has planned to compete five or six reviews annually. These, as I mentioned, are at the request of member states. In the aftermath of Chernobyl, we expect to see an increase in the number of such requests, however, and the Secretariat has proposed doubling the number of visits. It is important to recognize, however, that the Agency's role in this area is purely advisory and that the visits of the teams are strictly at the request of member states.

Shortly after the Chernobyl incident, some suggested that the IAEA be given the mission to conduct international nuclear safety inspections in a manner similar to the safeguards inspections which it now performs. the idea of mandatory international safety inspection obviously has some attraction. I would caution that it raises a number of legal, technical and political issues, which we believe could prove very difficult if not improbable to resolve. Moreover, such a program could detract seriously from the Agency's essential safeguards reponsibilities.

The establishment and maintenace of safety standards and the conduct of inspections to assure compliance with those safeguards is a jealously guarded national prerogative in most states. The health and safety and well being of a nation's population, after all, is one of the most important responsibilities of the government.

There would be a serious reluctance, I am aware, on the part of many states to turn over all or even a part of that responsibility to

any international body. In many countries, there is an internal governmental arrangement, as well, which separates the safety authority from the executive authority of the government.

In our country, that responsibility, the responsibility of safety inspection, is vested in the Nuclear Regulatory Commission by law. The utility companies, I would note, have added a further inspection effort in the United States, conducted by the Institute for Nuclear Power Operations. Thus, in the United States, the safety inspections are conducted under the most stringent guidelines and with expert and highly trained personnel, this or much of it guided by law. The same is true in most countries.

I would also note that the cost of operating such a mandatory inspection program would be great. The Nuclear Regulatory Commission, as an indication, of course, inspects approximately 100 nuclear powerplants in the United States on a regular basis. I am speaking only here of nuclear powerplants. The cost of those inspections is estimated to be over $400 million and requires 546 assigned personnel.

I would say I think the $400 million is the total cost of the Agency. Not all that is, obviously, involved in inspections. I would guess, and I will ask someone from the Nuclear Regulatory Commission to confirm that, I would guess probably 25 percent of that is in direct inspection costs. But in any case, it does require some 546 personnel.

The number of powerplants which the IAEA would have to inspect, if there were a mandatory program worldwide, would be over, at the present time, over 300 and with nearly 200 more under construction. Given the tight limitation on the budgets of that Agency, the cost of such a program, assuming even that all of the trained personnel were, in fact, available, and that would be a serious question, the budget cost would have a serious effect on other vital programs. I am concerned there, principally, with the safeguards efforts information.

One idea which has been mentioned in relation to safety inspections is the prospect for safety inspectors that might accompany IAEA safeguards inspectors. However, here, the purpose of safeguards inspections is vastly different from that of safety inspections. Access to facilities for each purpose would be certainly different. Different local officials would be involved for each of the purposes. Information gathering and assessment systems would be completely different. In short, the potential for making safeguards inspections more cumbersome and confusing is significant in such a scheme, and thereby almost certainly would reduce, in my judgment, the effectiveness of the safeguards inspectors.

That having been said, however, the OSART Program to which I referred earlier in our view provides a mechanism for assisting developing countries and developed countries alike. In particular, it would make available to developing countries—and I think here the need is the greatest—it would make available to those countries trained and experienced personnel who could supplement the individual country's efforts. The program could provide an information base from which a single country's program of inspection could proceed.

For a variety of reasons, therefore, we believe the Agency should continue its safety advisory role as a separate effort through onsite OSART team visits to nuclear facilities as required by member states. Of course, we are referring to member states to make those requests. Following Chernobyl, I am confident that there will be more requests that the Agency, for the short term, at least, will be able to accommodate. We will make every effort to ensure that the necessary resources are available to permit expanded effective use of these teams and this program.

I have given a brief summary, Mr. Chairman, of ideas being considered to expand international cooperation in nuclear safety. As I noted, the existing programs are being reviewed to determine how best to build effectively on the experience to date. Our objective is to achieve expansion in nuclear safety cooperation with programs that meet genuine needs at reasonable costs.

Mr. Chairman, I know that this committee and other Members of the Congress are concerned about whether the IAEA will have resources necessary to pursue effectively all of its important programs, including expanded work in nuclear safety.

I want to emphasize that the administration fully shares this concern, and we are committed to providing the resources necessary for these programs to the very best of our ability in this difficult financial period.

Earlier I described the near-term activities approved by the June Board of Governors meeting, which will continue through this summer and into the fall. The projected cost to the United States of these activities through 1986 is approximately $500,000, and we will make a voluntary contribution to the Agency to help defray that expense. That contribution will be in addition to our customary voluntary funding available to the IAEA each year.

In the longer term, the Board has approved, as I indicated, additions to the Agency's 1987 regular budget totaling $2,030,000. The United States assessed share of that regular budget, of course, is 25 percent. Our budgetary request to the Congress for our assessed contribution will reflect this need for additional resources. While no decisions have been made with respect to funding for nuclear safety in 1988, we anticipate, I would add, this will be a matter for the General Conference's consideration and Board's meeting in September. We anticipate the need in 1988 for further increases in funding for safety-related activities. We will endeavor to ensure that such increases are no bigger than required to do the job, but we will determine what is, in fact, required, and we will be prepared to meet that need.

We believe that the financial projections provided by the IAEA for expanded activities in nuclear safety are realistic and responsible and that they merit the support of all of the IAEA membership. We have worked and will continue to work closely with this committee and others in the Congress to ensure the strongest possible U.S. support for these activities, and I would again say how much we appreciate the support the committee has given us in the past. Of course, we will also be seeking your support for the other programs of the Agency which so clearly serve both United States and international interests.

Thank you very much for your courtesy, Mr. Chairman, and I would be pleased to answer any questions which may occur.

Senator COCHRAN. Thank you, Ambassador Kennedy, for your presentation to our subcommittee. Let me ask you this. At the International Atomic Energy Agency in Vienna, I understand there are two conventions on which work is progressing. They both deal with mitigation of accidents. Why is there not work in progress on a convention dealing with the prevention of accidents?

Ambassador KENNEDY. The prevention of accidents, Mr. Chairman, is, I would have to say, a fundamental objective of safety systems, and as an old regulator concerned with precisely that problem, and I was one of those who—I will choose my word carefully. I was going to say suffered through—I think that is a fair statement—the events of Three Mile Island, I can assure you that the commitment of this country and the commitment of certainly, I think, all who have devoted substantial interest in and resources to the development of nuclear power as an energy source, an electrical source, their objective is the same as ours, and that is, prevention of accidents.

How do you do that? Well, you do that with design and the safety philosophy which precedes actual design. It would be very hard to establish a convention which had for its purpose prevention on an accident. That is a matter of safety design, the actual systems as they are designed and constructed.

What you can do is establish the kinds of guides and safety guidelines which exist in the some 55 guides and 5 codes which the Agency has produced and then try to assure that these are applied as effectively as possible.

Each country has a safety organization, and we have commended those guides and codes to the attention of all those organizations, and for the most part, I think, they are being pursued. One other thing that you can do in case of an accident—it is not prevention—is what one of these proposals suggests, and that is provide a notification program in order that any kind of accident is made known promptly to anyone who might be affected this could reduce, and mitigate the effects of the accident, which is extremely important.

Senator COCHRAN. I understand that there are guidelines that have been put in place and that the Soviet Union participated, along with our Government, in developing these guidelines. But in the aftermath of the accident at Chernobyl, the guidelines weren't followed.

Does this tell you that we may need to reach further agreements about the compliance by member countries with guidelines that are in place and standards that are agreed upon at Vienna?

Ambassador KENNEDY. It is precisely for that reason, Senator, that the two conventions are now, again, under active consideration and that we have pursued those conventions vigorously. As I mentioned, the United States, back in 1980–81, attempted to put into binding form, as conventions, as agreed international conventions, very much the same proposals which are now being considered once again in Vienna.

This time, we have every hope that those guidelines will, in fact, be made mandatory and will be accepted as internationally binding commitments.

Senator COCHRAN. As far as the safety standards are concerned, I know that there are safety standards that are part of the code of practice or just the other way around, the code of practice is in place. But can we really be sure that compliance is occurring without onsite inspections? And assuming that that is true, what progress, if any, do you foresee at Vienna in getting agreement for onsite inspections to ensure compliance with safety standards?

Ambassador KENNEDY. As I indicated, Senator, I think there would be great difficulty to establish some mandatory inspection system, for a whole host of reasons. But I do think, as I mentioned, that there is going to be a much wider acceptance of the program of the operational safety review teams which the Agency now has. These visits are voluntarily sought by governments. The objective is to give an honest, thorough analysis, assessment, of the operational practices and safety considerations at a given plant, to assist countries in determining just what the status of their facilities may be, and even perhaps as important, the effectiveness of their own inspection and review process.

Senator COCHRAN. There are states, of course, who signed the Nonproliferation Treaty and have voluntarily agreed to inspections for nonproliferation purposes.

Can't we be encouraged by that and anticipate that it is possible to reach some kind of agreement for onsite inspections for safety standards, as well?

Ambassador KENNEDY. Well, Senator, I think there are a great many differences between safeguards on the one hand and safety inspections on the other. Now, I am not suggesting that they would not be useful. I am simply suggesting that they will be extremely difficult to come by. There are vast differences between systems. There are differences. Let me just use an example.

There are safety standards which we would apply and ways that we would apply those standards which are different from those which some of our western allies, for example, might apply. They pursue their particular safety system because it is adapted to and adaptable to their particular circumstances, the siting rules and so on. There are a variety of ways in which a particular safety objective can be achieved.

In our own circumstance, we have, in all probability, more options to pursue than many of them do. That does not go to say that their own safety systems are any less desirable than ours. They are simply, in some cases, different.

The objective is the important thing, and do you actually have a system which will achieve that objective.

Senator COCHRAN. Is it true that the Soviet Union might invite an operational safety review team to review one or more of its nuclear reactors?

Ambassador KENNEDY. I can't say whether they will. There has been some indication that they might. That is a question which I propose to put to them next week when I am in Moscow discussing this, among other things.

Senator COCHRAN. What do you anticipate accomplishing as a result of your discussions with Soviet officials?

Ambassador KENNEDY. I would rather answer that question when I come back.

Senator COCHRAN. You can't give us any "scoop"?

Ambassador KENNEDY. What are the objectives? The objectives, I think, Senator, are twofold: First, this is one of a regular series of semiannual meetings with the Soviet Union in which we discuss the full range of nonproliferation concerns, interests, which, in most cases, we share and find ways in which those objectives can be pursued more effectively, individually be each State, and with our respective trading and political associates.

We have broadened those discussions to include a variety of other considerations, such as safety questions, and we will be discussing those in this case. There are a number of things we want to find out something more about, for example, what the Soviet Union sees as the way of proceeding on these questions at the August 25 meeting in order that we can prepare ourselves more effectively to participate in that meeting on a technical level.

We are going to be interested in organizational arrangements which are being made in the Soviet Union. We have our own, as I mentioned, with our Nuclear Regulatory Commission on the one hand, our Department of Energy activities on the other, and of course, the organizations of utility companies on yet another hand here, all of which relate to safety questions.

The Soviet Union has just reorganized and created a new ministry. We are not quite clear on how all their agencies are going to relate and what the missions of each will be and how they will be developing safety systems and programs down the way. We will be interested in seeing what that is all about. And obviously, we are going to want to get a better understanding of their basic safety philosophy, both in terms of design; in terms of siting; in terms of health effects and the like. We would like to get a better appreciation of that from them, and they from us.

Senator COCHRAN. Two weeks ago, we conducted a hearing in Miami, FL, to examine possible implications for the health and safety of citizens in the Southeastern United States as a result of the construction of two nuclear reactors in Cuba by the Soviet Union. Will you have an opportunity to ask the Soviets whether or not they are prepared to undertake vigorous compliance with safety standards to help assuage concerns that exist in the Southeast of our country about the consequences of a nuclear accident at Cienfuegos?

Ambassador KENNEDY. Indeed, Senator, we have made through our interrogatories, the Soviet Union aware, that that is one of the subjects that we will wish to discuss with them, not in an accusatory way, but in an informational way.

We would like to know just what it is that they see are the essential safety systems in those reactors and what the potential of those safety systems has for protecting the health and safety of our own people.

Senator COCHRAN. Thank you.

Senator Glenn.

Senator GLENN. Thank you, Mr. Chairman.

Mr. Ambassador, I think IAEA, as I see it, is at a very critical stage right now as to whether they expand into other areas or whether they will be as active in areas of nuclear safety as they have been in some other areas. For instance, they started out by

trying to protect diversion of material from these plants that might be used for a nuclear weapons purposes, and that was the basic reason why we had IAEA and why we supported it.

Now, in the June 5 issue of Nucleonics Week it says, "IAEA is being urged from some quarters to push for a system of international nuclear safety inspections as it now safeguards against nuclear materials diversions."

And Hans Blix told the NRC participants that, I quote, " 'Obligatory international safety inspections of nuclear installations are not likely to be introduced.' Not only, he and others explained, would this be hampered by the worldwide differences in safety systems and safety views, but it represents a 'very, very vast undertaking that would likely dwarf the Agency's $30 million annual safeguards effort'."

I think something like that is absolutely necessary, myself. Do we support that as a Nation? Do we support expanding into this safety area with required safety inspections as the nations sign up? What is our position on that?

Ambassador KENNEDY. Senator, we do, as I indicated, want to see an expanded safety inspection program. But to establish a mandatory inspection system, as I tried to explain in my prepared statement, is a great undertaking which has not only technical considerations involved and the article mentioned one, the fact that there are a large number of different systems and you can't apply a single set of standards; you have to have standards for all of them.

Second and equally importantly, is the political consideration that, in fact, every country, and our own is, I think included, jealously guards its responsibilities for the health and safety of its public and creates institutions precisely to accomplish that purpose. In our case, it is the Nuclear Regulatory Commission, which is guided by and directed by a very extensive body of legislation which affects all of its safety-related activities.

I am confident that this country would not wish to give up that responsibility in favor of some other institution. What we can do is attempt to get a broader understanding of the basic considerations which go into those guides and codes which the Agency has already published. They are widely accepted and widely understood. What we might see is a wider and wider acceptance of them.

Senator GLENN. The reason I think this is so critical now is that over half of the nations with nuclear plants in the world, by the year 2000, will be Third World countries. That means that those are places with less technical capability, fewer nuclear engineers, fewer safety standards, not an awareness of some of the standards, and so our problem is going to rise as time goes on.

Now is the time to get hold of it, it seems to me, if we are going to do it. I would think that a $30 million budget is not enough. Let me just comment on the word safeguards. I think that is a misnomer, also, and I have always felt that. The inspection system that they place in plants now neither makes the plants safe nor does it guard anybody. It is basically an information-gathering system that just monitors what is going on there, and then if there is a diversion of the material detected, and then it can be brought to the attention of the Board of IAEA and eventually to the United Na-

tions, if necessary, although I don't believe any cases have ever been brought to the United Nations as far as I know, have they?

Ambassador KENNEDY. No, sir, because there have never been cases of diversion of that kind

Senator GLENN That is good if we can prove there were no diversions of that kind. It is really a serious matter. So it is mainly an information-gathering system and we call it safeguards. It would seem to me with Third World countries being among the main ones that will develop their nuclear facilities between now and the end of the century, that now is the time to put in a similar system not necessarily just for detecting diversion, but for checking safety matters, and it is in the interests of those Third World countries to see that being done, it seems to me.

I want to urge you and the administration to certainly consider pushing as hard as you can to put that kind of a system in in addition to the safeguards monitoring to prevent diversion.

Ambassador KENNEDY. Senator, may I make two comments? First, on the question of safeguards, I think it is a misnomer, as well. But whatever the fact, it is not just, with all due respect, an information-gathering system; it is also a surveillance system.

There are a variety of direct controls over the material so that the fact of a potential diversion or misuse would be known; it wouldn't be just simply collecting the information. It would be identified, in fact, with the safes, the locks, the cameras and the direct inspections.

But as to your point about the developing countries, it is a fact that there are increasing numbers of reactor systems that are making it through developing countries. I accept clearly the point that major efforts must be made to ensure that these things, if they are going to be operated, are constructed and operated safely. For our own part, and I am confident that the same is true with respect to certainly all of the western reactor venders, for our own part, we ensure that those that are being built in this country are built essentially to the same standards as we would build our own. That is, as far as supplying components, components would meet our codes and standards, and when a reactor vendor from this country deals with another country, he is working with a system which he has already developed and, by and large, has been able to get licensed for operation in this country. That means that all of its componentry is developed against the codes and standards which our own system, our own safety system, would require.

That is No. 1. No. 2, every contract of which I am aware includes in it a substantial provision for training of operators and managers of any such plant in order that they can understand more fully the system itself in specifics and all the characteristics of that system and what is necessary for safe operation and maintenance of that system.

In addition to that, as I said, we also encourage those countries to actually participate in the OSART program and nearly all, or I think all but one of the eight visits by OSART teams up to now have been to developing countries. We anticipate considerably more, and we are encouraging that.

One last point that I would make: Both the Agency and the United States are making major efforts at training, and there is a

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very substantial training effort in universities in this country and through the IAEA's auspices indirectly, some in this country and some in Europe, in nuclear engineering and in nuclear power operations.

Senator GLENN. On page 12 of your testimony, in the last part of that first paragraph, you say: Thus, in the United States, the safety inspections are conducted under the most stringent guidelines and with expert and highly trained personnel. The same is true in most countries.

Do you believe that is really true? I would really question that last remark there, because as we get more and more Third World countries on stream here, I would question whether they have the highly trained personnel and the same kind of expertise that we have in this country to do our inspections here.

Ambassador KENNEDY. We are doing everything we can to assure that that is the case; that, in fact, those people are trained. We have, for example, have had for a number of years a program in which people from some of those countries come here to the United States and actually participate in some of our own inspection activities in a learning mode.

The same thing is true with these OSART programs. Developing countries are actually having people assigned to those OSART teams so that they can learn how to conduct such inspections.

Senator GLENN. Back across here, again, you mentioned the figure of $400 million for our program here, 546 assigned personnel, $400 million and I believe you said that you though maybe as much as 25 percent of that total cost might be the direct inspection costs.

Ambassador KENNEDY. The budget of the Nuclear Regulatory Commission is about $400 million. The Office of Inspection and Enforcement *under* NRC budget is about $100 million.

Senator GLENN. But if we just accepted your figures, that would mean that even in our own country here, that would mean $100 million spent on inspections, and the total IAEA budget is $30 million to do the worldwide job. Isn't that woefully inadequate?

Ambassador KENNEDY. I think it is woefully inadequate if one has to assume that they were going to have to do the worldwide job. In other words, would we want them to duplicate what we are doing in this country, which is already, in a sense, duplicated? The NRC is doing it, by law, as it properly should. But the nuclear industry is doing it itself, as it were, through the Institute of Nuclear Power Operations.

So there is a dual inspection operation going on in this country. The same thing is true, very much true, in, for example, France, West Germany, all of the western European countries, and Japan.

Senator GLENN. The IAEA budget has remained basically flat, and our support for it has remained basically flat. In fact, there were proposals that we cut out some of our support at one time. I believe our support has remained constant; is that correct?

Ambassador KENNEDY. Actually, slightly growing, certainly enough to cover inflation.

Senator GLENN. OK, but the number of inspections per unit per year has to be going down. It can't help but be going down, because more and more and more plants are coming on stream, and yet our

budget remains flat. The IAEA budget remains flat, and our support for it remains flat. So it means the inspections per unit have to be going down because there are more units coming on stream, and that is going to come toward the end of the century. What are we going to do about it, ask for an increased budget?

Ambassador KENNEDY. Are you talking about safeguard inspections?

Senator GLENN. I am talking about safety inspections, which I think is a whole other area we ought to be doing, because it is going to get worse, not better.

Ambassador KENNEDY. Let me just say that I think in earlier testimony I did mention my own concern on precisely that point. We have maintained a basic policy of zero growth throughout the U.S system, including the IAEA. We have had, I say, in respect to the IAEA, however, the policy also of looking hard at where exceptional circumstances require some improvement.

We have done two things: First, we have the hard work and successful work of the Director General. There have been successful improvements in efficiency throughout the organization, both the organization as a total, and in safeguards organization. So that with no major increase—and I say major, because there have been increases—with no major increase, there has been substantial improvement in the amount of material, the amount of work that can be done in the safeguards area.

We are coming to a point where, in my view, that may well be. There will come a point, and I don't know when that is, in a couple of years, surely, when the point that you make is absolutely true; more installations are coming on stream. We are increasing effectiveness, all right, but you are going to have to have more inspectors. We know that, and there is going to have to be more money available for it.

Senator GLENN. I hate to disagree with a learned expert like yourself, Mr. Ambassador, but I think we went past that point a couple of years ago, several years back. I think we should have been expanding IAEA to increase its activities, rather than remaining flat. I just am afraid this whole thing is beginning to get away from us, because we are seeing an increase in the number of plants, a flat budget, fewer inspections. People, unless somebody is looking over their shoulder, are such more likely to cut corners, and that is a dangerous situation.

So in the safety area, I see this as an increasing hazard, not a decreasing one. You are right that the efficiencies have been increased within IAEA and some of their equipment is better and we have helped them develop some of that equipment, monitoring equipment. I appreciate that. But I would submit that the efficiencies have not gone up commensurate with the job to be done and the number of additional plants that have to be monitored around the world.

So it is going to get far worse as time goes on. We could wind up with more Chernobyls, not less, and more TMI's, which we contained, fortunately, but more Chernobyls instead of less. I just hate to see us cutting back in this one area of the IAEA, the one area, the one organization that monitors for us what is going on around the world.

After the Chernobyl accident of April 30, I wrote a letter to the President about some of the concerns in this area and asked about the administration position on different things in that. I got a letter back in June from the White House, from William L. Ball, Assistant to the President, and one of the last statements he made was, In the wake of the Chernobyl accident, the United States will certainly pursue actively appropriate additional means of cooperation, both on a bilateral and multilateral basis, including efforts to mitigate the consequences of such accidents.

The bilateral sort of jumped out at me. I wasn't aware we were making bilateral safety agreements with particular countries on an expanding basis as sort of an adjunct to IAEA, if that is what he meant.

Can you elaborate on that a little?

Ambassador KENNEDY. Yes, sir.

Senator GLENN. What are we doing on a bilateral basis?

Ambassador KENNEDY. For example, we have a number of science technology agreements, nuclear cooperation agreements, and the Nuclear Regulatory Commission as a very large number of agreements in the safety area which are called bilateral in which exchanges of information occur. For the developing countries, in particular, there are many such agreements which the NRC has which involve actual training of safety personnel who come here to the United States to work with the Nuclear Regulatory Commission to learn from it.

There are bilateral arrangements for the exchange of information which extend across the board. Now, multilaterally, they are also tied in. Where we have exchanges of information on radiological protection, for example, this information is also fed into the Nuclear Energy Agency and to the IAEA by both bilateral arrangements and multilateral arrangements. There are many, many such arrangements for the exchange of information.

Senator GLENN. There is an adjunct of information, an addendum to IAEA. I would rather see these things set up on a worldwide basis through IAEA where the standard applies all over to everybody. But I guess lacking the ability to do that, bilateral arrangements are good, also.

After Chernobyl, I was thinking and one obviously starts thinking about what are we downwind of. It is basically Canada. What arrangements do we have in case of a major nuclear accident in Canada? Do we have a cooperative agreement already worked out? And/or the other way; our wind blows and flows back and forth across the Canadian border. Our weather patterns come down across the Canadian area to a large extent. Then the jetstreams we see every day do whipping back up across eastern Canada and some of their major populated areas. Do we have any special agreements with Canada if there was a nuclear accident along our northern border or in Canada that would blow down into our country?

Ambassador KENNEDY. There are agreements, yes, sir.

Senator GLENN. That would be just information.

Ambassador KENNEDY. There is much more you can do. At that point, we would notify them, too, and the Canadians would and

always have. Should there be such an event, we would actually provide assistance to one another.

Senator GLENN. Do we have emergency teams in this country that can go into action immediately or go into Canada if requested in a matter of hours after an accident?

Ambassador KENNEDY. Yes, sir. Both the Nuclear Regulatory Commission and the Department of Energy have such teams.

Senator GLENN. Does Canada have such teams?

Ambassador KENNEDY. Yes, they do.

Senator GLENN. Do they train together?

Ambassador KENNEDY. That, I do not know, Senator. I can find out and provide it for the record. Perhaps if there is someone here from the Nuclear Regulatory Commission?

We will have to find out.

Senator GLENN. If you could find out and provide that for the record.

[The material referred to follows:]

The United States and Canadian teams have not *trained* together. However, they have worked together and have observed each others exercises.

Ambassador KENNEDY. I would add that the same thing applies south of the border.

Senator GLENN. I am sorry?

Ambassador KENNEDY. It applies south of the border, too, in Mexico.

Senator GLENN. In this area, I have felt for many years that we have not pushed hard enough, in the area of pushing IAEA and supporting IAEA and giving IAEA more of a budget to work with in doing that they have to do. I have spoken in this committee on that regard for the better part of a decade, I guess. I think we are at a real critical time right now with regard to monitoring what is going on around the world, because between now and the end of the century, those people getting nuclear powerplants and nuclear energy and doing experimenting and so on will be people who do not have the scientific background and technology background that we have and the Soviet Union has and that the other nations with major nuclear power have.

It seems to me that we better be setting up a monitoring system and getting their cooperation so that we can guarantee that we don't have more Chernobyls around the world coming from some of these Third World countries, in particular. If we have trouble in this country with something like TMI with our expertise and the Soviets have trouble, then I hate to think what is going to happen when we get powerplants, more of them, on stream in areas of the world with a science background less able to take care of them than we have been.

So I think it is a fertile time now, or it is a good time now to at least suggest it, to try to urge IAEA into more effort and supporting them.

Just one other additional question pops to mind. Were these funds to IAEA cut back as a result of Gramm-Rudman?

Ambassador KENNEDY. Yes, sir, but before that——

Senator GLENN. They were cut back as a result of Gramm-Rudman?

Ambassador KENNEDY. Yes, but before that, let me just say, Senator, they already had been cut back. Our requests, both for voluntary contributions, much of which supports the program, our requests were reduced by Congress in 1984, 1985, and again in 1986. We, as you know, fully support the view which you are expressing about the importance of the Agency, both in safeguards and in safety, and we would do anything we can to assure that, in fact, funds are made available.

We will continue to request what we believe are the amounts essential to continue the agency.

Senator GLENN. I am for whatever the agency needs to do its job and for supporting our contribution to do that, to urging other nations to do the same thing. I think when we got into a situation where we are putting a government on autopilot with Gramm-Rudman, which is now up in the air, of course, but when we actually cut funding for something like the nuclear safety monitoring of IAEA, that is just irresponsible.

Be assured of my support for expansion of IAEA in whatever area you want.

Ambassador KENNEDY. For the record, on that point, I can note, Senator, that in 1986, we requested $20.5 million and of that, about $16.9 and a half million was authorized, and under Gramm-Rudman, the 4.3 reduction would be applied to that. That is the state affairs.

Senator GLENN. That has already been cut? The 4.3 is that in the spring cut?

Ambassador KENNEDY. Yes, sir, Yes, sir.

Senator GLENN. We ought to look into that here.

Thank you.

Senator COCHRAN. Ambassador Kennedy, do you know of any IAEA member States supporting mandatory safety inspections for nuclear reactors?

Ambassador KENNEDY. No, sir, I do not at this point. The question really has not been addressed in recent days.

Senator COCHRAN. Let me ask you about the authority of IAEA. If nations agreed on a convention for onsite safety inspections of nuclear reactors, would there have to be an amendment of the statute under which IAEA operates so it would have that authority?

Ambassador KENNEDY. No, sir, I do not think so. I am not the lawyer, but my understanding of the statute is that this could be contemplated within the statute as part of its associated promotional activity. That is safeguard and promotional activity, which includes safety work and the use of nuclear energy.

So I think that could be done if the member States conveyed that authority to it and requested it to do so.

Senator COCHRAN. I understand that there are impediments to onsite inspections. They may not be feasible at this time, but if they aren't, are there any other universal safety measures which might be undertaken, for instance, universal certification of reactor personnel upon completion of an IAEA safety training course?

Ambassador KENNEDY. Certainly, there could be certification. Universal is another question. Let me point out that we have a very stringent certification system here in the United States for all operating personnel, and not only do they have to pass a very, very

intensive training program and actually be certified, but they have to be recertified on a regular basis.

I am confident that we would, no matter what the IAEA might do in this regard, we would not give that up. I think that is exactly what everybody else would do.

Senator COCHRAN. Yes, but as minimum standard, would it be feasible to work toward an international certification process of reactor personnel?

Ambassador KENNEDY. Senator, that is an interesting notion which I would like to think a little bit more about. My initial reaction is yes in the sense that one could say that if one has been certified by, for example, in the United States, by the Nuclear Regulatory Commission as an operator, as a certified reactor operator and given a license which they are given, that that, in fact, would be prima facie evidence of international certification. I suspect that there are few, if any, certification requirements as rigorous as those which the NRC applies.

It would be, from our point of view, nice if, in fact, we could see all of such operators certified in the same way. But in that connection, I want to add here for the record that I do not mean to imply that those particularly advanced countries where major nuclear power programs are now in place, and I would put there countries like Korea, Taiwan, which in other respects might be considered developing countries but in the nuclear field are very advanced, indeed, I would not want to suggest for a minute that their standards are not of the highest, because it is my impression, indeed, that they are. They are reflecting, in most cases, our own standards and the standards of European nuclear system vendors which have very high standards, as well.

Senator COCHRAN. I want to be sure that I understood a statement you made in your initial presentation to our subcommittee this morning, and that is that the United States is committed to strengthening the IAEA so that the Agency can provide safety inspections for any nation requesting them.

Ambassador KENNEDY. That is absolutely the case, yes, sir.

Senator COCHRAN. I have one final question. That is this: It has been suggested that nuclear safety would be greatly enhanced by the development of inherently safe nuclear reactors which, in the event of a breakdown, would shut themselves off immediately without human intervention or backup systems. This would presumably make the reactors invulnerable to accidents involving large radioactive release.

How close are we, if you know, to widespread availability of such reactors?

Ambassador KENNEDY. Widespread availability, that is a different question. Let me say, Senator, first, that I am well known in the community as being one of those who objects to using terms like "inherently safe." I always worry that all of my attorney friends will remind me that the opposite of inherently safe is inherently unsafe.

I do not assert and would not think that the reactors now in existence that have had thousands and thousands of operating reactor years with very, very few significant accidents, indeed, would

be considered unsafe. So I don't want anything I say to imply that I think the present machines are unsafe, because I do not.

Now, to go to the other point, machines which are designed in a different way which have different characteristics operationally under certain circumstances, instead of propagating an accident, would, in fact, in effect, shut themselves down. That would be the way it would be designed; it simply wouldn't function any longer; it would shut itself down and thus reduce the likelihood of a propagating accident. There are designs which aim at that objective and, indeed, I think there are prototype machines which, in fact, operate to do that. That is a long way from being, as you put it, widely available.

How long it would take to perfect designs of those machines to get general acceptance of them in terms of all the other safety considerations about their designs, I don't know, but that is something the Nuclear Regulatory Commission, I know, is already thinking about. I just read that they have once again created a branch review in their reactor regulation office and I think an R&D exercise to actually undertake a review of such advance systems to find out whether, indeed—and these are new advanced kinds of systems—our next generation, if you will if they are licensable. My understanding is that the NRC has undertaken that; they have undertaken to look at that.

So my guess is, and it is only that, Senator, when those machines, if at all, are ready, the NRC will have looked at them and will be able to say, "Yes, that is a licensable machine."

At that point, given only the time it takes to build them, they will be so perhaps widely available.

Senator COCHRAN. I appreciate, again, your being here today to review these matters with our subcommittee. We wish you a safe journey to the Soviet Union and profitable discussions there with your counterparts in Moscow. We look forward to continuing to monitor the activities of the IAEA and hope that we see some progress toward strengthening the organization and its ability to help improve safety standards and restore confidence in manageability to use nuclear power in a way that doesn't threaten the well being of mankind.

Thank you very much.

Ambassador KENNEDY. Thank you. Senator.

Senator COCHRAN. The hearing is adjourned.

Ambassador KENNEDY. I look forward to the opportunity of keeping you fully aware.

[Whereupon, at 11:28 a.m., the subcommittee was recessed, subject to the call of the Chair.]

Additional Material Submitted for the Record

Prepared Statement of Ambassador Kennedy

Mr. Chairman, it is indeed a pleasure for me to appear before your Subcommittee to discuss the programs, activities and future prospects for international cooperation in nuclear safety which are implemented through the International Atomic Energy Agency (IAEA).

At the outset, Mr. Chairman, let me say that, as the U.S. Representative to IAEA and U.S. member of the agency's Board of Governors, I greatly appreciate your support of this vital organization and your continuing interest in it.

The important work and contributions of this international organization in promoting the peaceful applications of nuclear energy while reducing the risk that nuclear material could be misused for non-peaceful purposes are, of course, widely appreciated. For almost thirty years, this organization has served major United States national security and non-proliferation interests, and strengthened the cause of world peace. The tragic accident at Chernobyl now has given the IAEA a much more visible international profile. The importance of the Agency as a central forum for international nuclear cooperation is

clearly demonstrated by the fact that IAEA Director General Hans Blix was the first foreign observer invited by the Soviet Government to visit the Chernobyl site after the accident. During Dr. Blix's visit, the Soviet Government agreed to provide information on the accident through the IAEA. Thus the agency has served as a major channel for distributing this information to the international community.

The statement issued on May 5, 1986 by the Heads of State or Government of the seven major industrial nations meeting at that time in Tokyo took special note of the efforts of the agency. The Tokyo Economic Summit statement reads in part:

> "We welcome and encourage the work of the IAEA in seeking to improve international cooperation on the safety of nuclear installations, the handling of nuclear accidents and their consequences, and the provision of mutual emergency assistance. Moving forward from the relevant IAEA guidelines, we urge the early elaboration of an international convention committing the parties to report and exchange information in the event of nuclear emergencies or accidents. This should be done with the least possible delay."

Immediately after the Soviet accident there was understandably considerable concern regarding the ability of the international community to respond effectively to a major nuclear accident. Many thought -- mistakenly -- that little work had been done internationally in the field of nuclear safety. However, it quickly became evident that the IAEA had done a great deal of work in nuclear safety over the past three decades. For example, the Agency has developed a series of internationally recognized nuclear safety standards published in approximately 5 codes and 55 safety guides. Moreover, it provides its members with advisory missions, conferences, seminars and training courses on safety, and promotes exchanges of safety-related information. This work by the Agency has been effective and is highly respected throughout the international community. Thus, the key question in considering possible expanded international cooperation in nuclear safety is how best to build on the work that has been done. Any such expansion must be carefully designed to avoid unnecessary duplication or overlap with other international organizations such as the Nuclear Energy Agency of the OECD or WHO (World Health Organization) and must meet the genuine programmatic needs of IAEA members.

The IAEA Board of Governors convened a special meeting

in Vienna on May 21 after the Chernobyl accident. The purpose of this meeting was to review the available accident information. Also, the Board began consideration of possible expanded activities by the IAEA in nuclear safety. In a meeting conducted in an atmosphere of commitment and mutual cooperation, the Board addressed the possibilities including: a post accident assessment, the drafting of two international conventions, a meeting of an expert working group to improve international cooperation in nuclear safety and a meeting of senior government representatives to discuss a range of nuclear safety issues. The Secretariat was directed to prepare proposals and plans on these and other safety program enhancement efforts for the Board's consideration at its June meeting.

The Board continued its review of prospects for enhanced cooperation in nuclear safety at its June 10-13 meeting. During this session, the Board gave its approval to several near-term activities to be pursued during the remainder of 1986, and began consideration of proposals for expanded work in 1987. Near-term activities agreed to by the Board include the drafting of two international conventions on an urgent basis. In direct response to the Tokyo Economic Summit statement, one convention deals with providing early notification and information about nuclear accidents with

potential transboundary effects. The second convention deals with assistance in the event of an accident which could involve transboundary radiological releases. Both conventions would be based on existing IAEA guidelines published as "Guidelines on Reportable Events, Integrated Planning and Information Exchange in a Transboundary Release of Radioactive Materials" (INFCIRC/321) and "Guidelines for Mutual Emergency Assistance Arrangements in Connection with a Nuclear Accident or Radiological Emergency" (INFCIRC/310).

We hope these conventions will be ready for adoption by the IAEA General Conference meeting in September. A representative group of government experts began by meeting on July 21 for three to four weeks to draft these conventions. The U.S. will, of course, participate in the drafting sessions. The United States several years earlier proposed conventions covering these topics, but there was little interest at that time. They were published as IAEA guidelines, as I noted earlier. We believe that, in the wake of Chernobyl, the prospects for success are significantly greater than was the case in the past.

A second activity approved by the June Board is a Chernobyl post-accident review to be held from August 25-29 in Vienna under the auspices of the IAEA. It is expected that the Soviet Union will present a technical review and analysis of the accident and its effects. The Soviet Union has been urged to make available as much detailed information concerning the accident as possible. Our delegation to this meeting will include highly qualified technical experts from the Nuclear Regulatory Commission (NRC), the Department of Energy (DOE) and the Environmental Protection Agency (EPA).

In addition to work on the proposed conventions and the post-accident review, the Board agreed to convening a special meeting of the General Conference which is the convocation of the entire membership of 112 nations. This session is scheduled for September 24-26, and is expected to address a full range of issues involved in international cooperation in nuclear safety. We hope that the meeting also will result in adoption of the two conventions I discussed earlier. The U.S. will encourage a high level of attendance at this meeting. The regular meeting of the General Conference will follow immediately after the special meeting and afford further opportunity to focus the membership's attention on safety cooperation.

Finally, we anticipate that there will be a meeting or meetings of technical experts in nuclear safety sometime in November. The group will consider the results of earlier meetings and additional measures that might be taken to improve international cooperation in enhancing nuclear safety.

The Director General has made a number of proposals to the Board for strengthening the IAEA's nuclear safety activities beyond 1986. These proposals are in the areas of nuclear power operations, radioactive waste management, health efforts, radiological protection and the safety of nuclear installations.

Continued efforts to study the health and environmental consequences of nuclear accidents are of particular importance. These and other activities in the nuclear safety area must, of course, be closely coordinated with other relevant international institutions, including in particular, the Nuclear Energy Agency of the OECD (NEA), the World Health Organization (WHO), and the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), to avoid unnecessary duplication and inefficient use of resources.

The proposals which the Board is considering and will decide upon at its September meeting include the following:

Nuclear Power

- The Agency's Power Reactor Information System (PRIS), which is used in the analysis of technical performance of nuclear power plants, will be integrated with other data banks in the agency so that it could be used as a source of plant data in case of emergency.

- PRIS will be made directly accessible to member states.

Radioactive Waste Management

- A review of methods to deal with radioactive waste resulting from a major accident, and

- A review of technologies and methods for decommissioning and disposal of nuclear facilities after an accident.

Health Effects

- Steps to improve the ability to make and compare

standardization radiation measurements.

- Development in cooperation with with UNSCEAR and WHO, of a set of reference methods for measuring key radioactive contamination and preparation of simple guidelines on sampling and reporting of results.

Radiation Protection

- Preparation of Technical Documents on assessing and controlling radioactive exposure in immediate post accident entry operation.

- Enhancement the Agency's emergency response mechanism to meet demands of a major accident and coordination of requests for assistance.

Safety of Nuclear Installations

- A study of mechanisms for managing a severe accident at a power plant.

- Expansion of the Agency's Incident Reporting System (IRS).

- Expansion of OSART visit program.

This, then, is a brief summation of the program for enhancement of the IAEA nuclear safety program.

You expressed Mr. Chairman, a special interest in the IAEA's Operational Safety Review Team (OSART) program and its possible expansion. This program was initiated in 1983 to assist both developing and advanced countries. Its basic purpose is to provide, at the request of an individual member state, comprehensive review of and recommendations for the safe operation of a nuclear facility. In developing and advanced countries alike the purpose is to provide an effective operational safety review. In advanced countries the review could also provide a training opportunity for participants from developing countries.

The OSART team consists of five agency staff members and five outside experts familiar with the specific type of reactor. The team typically spends three weeks at a particular site. The cost to the agency is around $50,000 (not including salary costs) with the host country paying the cost of hotels, local transportation, etc. To date there have been eight OSART reviews. The last was in Finland in March, 1986. The next OSART visit is scheduled for Sweden in October. The only other advanced country in which a review has been conducted thus far is France.

The agency had planned to complete five or six reviews annually. In the aftermath of Chernobyl, we expect to see an increase in the number of requests for such visits. The IAEA Secretariat has proposed doubling the number of visits. It is important to recognize, however, that the IAEA's role in this area is purely advisory and that the visits of its OSART teams are strictly at the request of IAEA member states.

Shortly after the Chernobyl accident, some suggested that the IAEA be given the mission to conduct international nuclear safety inspections in a manner similar to the safeguards inspections which it now performs. The idea of mandatory international safety inspections has some attraction. It raises a number of legal, technical and political issues, however, which we believe could prove very difficult if not impossible to resolve. Moreover, such a program could detract seriously from the Agency's essential safeguards responsibilities.

The establishment and maintenance of safety standards and conduct of inspections to assure compliance with those standards is a jealously-guarded national prerogative in most states. The health and safety and well being of a

nation's population, is after all one of the most important responsibilities of the government. There would be a serious reluctance on the part of many states to turn over all, or even a part of that responsibility to any international body. In many countries, there is an internal governmental arrangement which separates the safety authority from the executive authority of the government. In our own country the responsibility of safety inspection has been vested in the Nuclear Regulatory Commission by law. The utility companies have added a further inspection effort which is conducted by the Institute for Nuclear Power Operations. Thus, in the United States the safety inspections are conducted under the most stringent guidelines and with expert and highly trained personnel. The same is true in most countries.

I would also note that the cost of operating such a mandatory inspection program would be great. The Nuclear Regulatory Commission inspects approximately 100 nuclear power plants on a regular basis. The cost of those inspections is estimated to be over $400 million annually and requires over 546 assigned personnel. The number of power plants which would be subject to an IAEA mandatory program would be over 300 now with nearly 200 more under consideration. Given the tight limitation on the budget of the Agency, the cost of such a program, even assuming that

all of the trained personnel were available could have a serious effect on other vital programs such as the safeguards effort.

One idea which has been mentioned in relation to safety inspections is the prospect for safety inspectors to accompany IAEA safeguards inspectors. However, the purpose of safeguards inspections is vastly different from that of safety inspections. Access to facilities for each purpose is almost certain to be different. Different local officials would be involved for each purpose. Information gathering and assessment would be different. In short, the potential for making safeguards inspections more cumbersome and confusing is significant thereby almost certainly reducing their effectiveness.

Nevertheless, the OSART program to which I referred earlier would provide a mechanism for assisting developing countries. In particular it would make available to them trained and experienced personnel who could supplement the individual countries' efforts. The program could provide an information base from which a countries' program of inspection could proceed.

Thus, for a variety of reasons, we believe the Agency

should continue its current safety advisory role as a separate effort through on-site OSART team visits to nuclear facilities as requested by member states. We will make every effort to ensure that the necessary resources are available to permit expanded effective use of these teams.

I have given a brief summary of the ideas being considered to expand international cooperation in nuclear safety. As I noted, existing programs are being reviewed to determine how best to build effectively on this experience. Our objective is to achieve expansion in nuclear safety cooperation with programs that meet genuine needs at reasonable cost.

Mr. Chairman, I know this committee and other members of the Congress are concerned about whether the IAEA will have the resources necessary to pursue effectively all of its important programs, including expanded work in nuclear safety. I wish to emphasize that the Administration fully shares this concern, and we are committed to providing the resources necessary for these programs to the very best of our ability in this difficult financial period. Earlier I described the near-term activities approved by the June Board which will continue through this summer and into the fall. The projected cost to the U.S. of these activities

through 1986 is approximately $500,000, and we expect to make a voluntary contribution to the Agency to help defray this expense. This contribution will be in addition to our customary voluntary funding available to the IAEA each year.

In the longer-term, the Board has approved the addition of $2,030,000 to the Agency's 1987 regular budget, of which the U.S. assessed share is approximately 25%. Our budgetary request to the Congress for our assessed contribution will reflect this need for additional resources. While no decisions have been made with respect to funding for nuclear safety in 1988, we anticipate the need for some further increases in funding for safety-related activities. We will endeavor to ensure that such increases are no bigger than required to do the job.

We believe that the financial projections provided by the IAEA for expanded activities in nuclear safety are realistic and responsible and merit the support of all IAEA members. We have worked and will continue to work closely with this Committee and others in the Congress to ensure the strongest possible U.S. support for these activities, and of course, the other programs of the Agency which so clearly serve both U.S. and international interests.

I hope that this statement has provided you with an overview of the current and possible future activities of the IAEA. I would, again, like to thank you for inviting me to appear before your Committee. I would be please to answer any questions you may have.